Turning the Tide
on runoff pollution
SC DHEC's Bureau of Water

Winter/Spring, 2005

Shoreline Conservation & Water Quality

By Jim Wilson, Urban Conservationist, NRCS

The vegetated buffer offers a conservation appearance while benefiting water quality and the lake integrity.

SCE&G and local conservation partners are looking at alternatives for shoreline protection at Lake Murray. Due to high winds and wave action across the lake, many shoreline areas have experienced erosion and loss of property. Historically, landowners have used conventional rip-rap (large stone) to stabilize soil areas. Rip-rap is still an acceptable treatment, but it has limitations and maintenance problems. New technology has shown that other erosion protection materials are available with added incentives, such as vegetation and aesthetics.

SCE&G has established a demonstration site to evaluate different conservation methods for shoreline protection. Conservation Partners participating in this demonstration project with SCE&G are the Natural Resources Conservation Service, East Piedmont RC&D, Lexington, Richland, and Saluda Conservation Districts, DHEC, DNR, and Clemson University. Products were donated by ARMORTEC and CONTECH.

At the demonstration site, ARMORTEC open-cell block (pictured below) that is uniform on the slope, is used to provide erosion protection and can be planted with selected plants, including grass, for beautification. Sod was planted along the shoreline edge and the even block provided easier walking. The cost is comparable with conventional methods of erosion control.

The vegetated buffer offers a

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Shoreline protection demonstration at Lake Murray.

Inside

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PROMOTE PROTECT PROSPER
South Carolina Department of Health and Environmental Control

In the Field

Characterization of Agricultural Land Uses

By Michael D'annucci, MSD Associates

The use of grassroots leaders for TMDL development has been applied to many streams in South Carolina that are exceeding the State standard for bacteria in agriculturally dominated watersheds. When utilizing local agricultural and conservation experts in the TMDL planning process, the farming community neighboring the polluted stream is far more willing to 'buy into' and accept the TMDL planning results.

One of the first grassroots TMDL planning projects in South Carolina occurred in the Thompson Creek watershed. The local Pee Dee Resource Conservation & Development Council (RC&D) received a Section 319 Nonpoint Source grant from DHEC to administer the TMDL project, and the local Chesterfield Soil and Water Conservation District acted as the lead on the technical program.

At the completion of the TMDL plan for Thompson Creek, it was determined that the results did not provide enough information to identify where to install the conservation measures and practices. It provided percent reductions in bacteria loads derived from specific sources (i.e., direct deposition of cattle waste into the streams, runoff of poultry litter applications), but the TMDL plan failed to specify the locations of these unsuitable farming activities. As a result, the Pee Dee RC&D Council and the Chesterfield Soil and Water Conservation District hired a consultant to characterize agricultural land uses in the Thompson Creek watershed by utilizing Geographic Information Systems (GIS). A database of agricultural practices at the farm field level in the Thompson Creek watershed was developed. Each farm field in the watershed was digitized, or electronically circled, and farm field specific information was housed in the database.

> The database is a live tool allowing the planning process to be fine-tuned and adjusted...

Information was collected from interviews with local farming experts, and the use of site field visits and drive-bys. Each farm field was listed as a pasture, cropland, hayfield, or idle. Farm animal sitings and poultry house locations were also noted. This information was then reviewed and farm fields were prioritized within the watershed for the installation and implementation of conservation measures and practices.

This use of a GIS database of farm fields to characterize agricultural land uses along impaired stream lengths has not only acted as a bridge between the TMDL results and actual on-the-ground implementation of conservation measures and practices, but has also served to provide additional benefits. As the conservation measures and practices are currently being installed in the watershed, the GIS database maintains a record of where these implementation activities have occurred and where they will occur in the future. The database is, therefore, a live tool allowing the planning process to be fine-tuned and adjusted to best meet the water quality goals of the stream in question. The agricultural land use characterization procedures have also been adopted by the grassroots leaders in the Upper Little Pee Dee River TMDL project where the majority of the watershed resides in North Carolina. The database has acted as a way of pulling together the various resources across state and county borders, and has molded a decision making framework based on what's best for the watershed as opposed to the respective jurisdictions.

These procedures for characterizing agricultural land uses in bacteria impaired watersheds has expanded to locations inside and outside of the Pee Dee RC&D Council service area. They have been applied to Fork Creek in Chesterfield County and the Santee-Wateree RC&D Council plans to use them in the Scape Ore Swamp and Big Swamp watersheds.

For more information please contact Michael D'annucci, (757) 469-0546 or dannucci@world net.att.net.

Watershed Minute

Middle Savannah Watershed Project

By Richelle Tolton, SCDHEC

Recently SCDHEC was awarded a U.S. Environmental Protection Agency (EPA) grant to focus water quality improvement efforts on the Middle Savannah River watershed in the Savannah River Basin. The objective of the grant is for at least 80% of the assessed waters in the watershed to meet their designated uses. This project is a national model for achieving water quality improvement at the eight-digit hydrologic unit scale. US EPA's Office of Watershed Management in Atlanta will assist SCDHEC in coordinating with the Georgia Environmental Protection Division (EPD) on this project.

The Middle Savannah River watershed (HUC 03060106) comprises 653,472 acres and 1,112 stream miles in the Southeastern Plains ecoregion of South Carolina. Most of the watershed on the South Carolina side of the Savannah River is within Aiken and Barnwell counties. This watershed includes reaches of the Savannah River, Fourmile Branch, Lower Three Runs, Briar Creek, Horse Creek, Hollow Creek, and Sand River, as well as Langley, Flat Rock, and Vaucluse Ponds.

During the life of the project several activities will take place. A comprehensive survey will be conducted to determine the extent and causes of water pollution, including fecal coliform bacteria and mercury. Also, SCDHEC will investigate, where they occur, the causes and effects of low pH and impaired macroinvertebrate communities. Nine pollution reduction plans or total maximum daily loads (TMDLs), will be developed and at least one TMDL will be implemented with the help of local organizations.

For more information or if your organization is interested in participating in the TMDL implementation, contact Richelle Tolton (803) 898-4213 or email: toltonrd@dhec.sc.gov.

News to Use

South Carolina NPS Program Making Progress

By Doug Fabel, SCDHEC

South Carolina's 2004 annual report on its nonpoint source management program is now available. Several interesting projects and activities are highlighted in the report.

The State is on-track in meeting the long-term goals including:

- comprehensively assessing water quality in order to identify NPS impacts and track improvements
- addressing pollutants noted in the 303(d) list
- developing and implementing nonpoint source Total Maximum Daily Loads (TMDLs)
- conducting effective outreach programs and activities
- maintaining and expanding partnerships and cooperative opportunities with stakeholders, other agencies, and citizens
- assuring effective and efficient use of financial resources, and leveraging funds from other programs

The focus of South Carolina's nonpoint source program has shifted to developing and implementing NPS TMDLs as the most efficient means of meeting many of the goals. Projects for these activities are the only ones eligible for section 319 grant funding (incremental allocation) since 2003. Successfully implementing a TMDL in a watershed will assure meeting water quality standards for that pollutant. Many of the other goals are also achieved because they are components of TMDL projects.

Read the 2004 Annual Report at www.scdhec.gov/eqc/admin/html/eqcpubs.html#water. Information from the South Carolina report will be combined with other state reports in the southeast (Environmental Protection Agency Region IV) and published in a regional annual report. It will be published in March 2005 and be available from EPA.

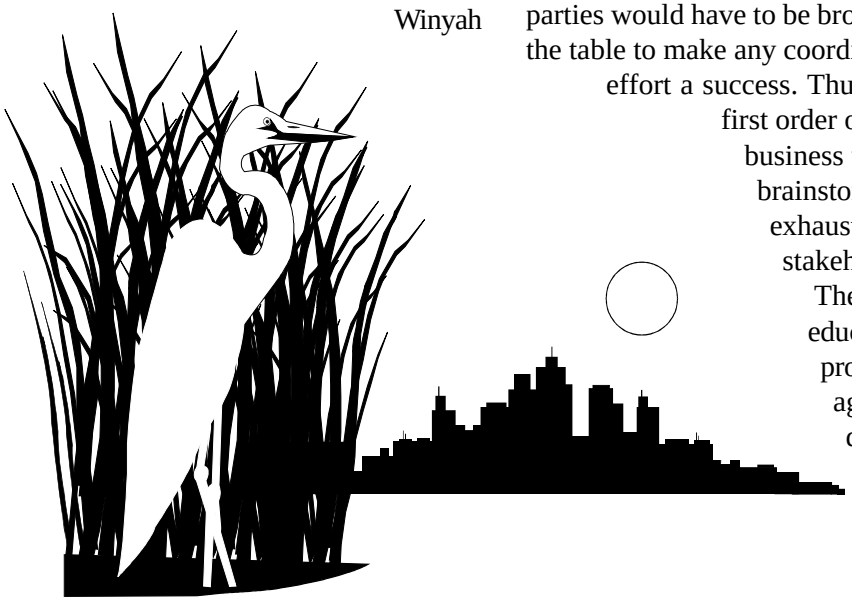
A Regional Approach to Stormwater Education

By Jeff Pollack, North Inlet-Winyah Bay CTP

The Coastal Waccamaw Stormwater Education Consortium (CWSEC) was formed in June 2004 to maximize the efficiency of stormwater education efforts in the northeastern coastal region of South Carolina (Georgetown and Horry Counties). The CWSEC strives to develop and implement effective, outcome-based stormwater education and outreach programs. These programs will meet the public involvement and education minimum control measures required by EPA's NPDES Phase II Stormwater regulations for small Municipal Seperate Storm Sewer Systems (MS4) communities and will help the communities represented by the CWSEC meet their stormwater management and watershed protection goals.

The idea for the Coastal Waccamaw Stormwater Education Consortium evolved in the Spring of 2004 when Jeff Pollack of the North Inlet-Winyah Bay Coastal Training Program, Susan Libes of Coastal Carolina University's Waccamaw Watershed Academy, Cal Sawyer of Clemson University's Carolina Clear Program, Hamp Shuping of the Waccamaw Riverkeeper Program, and Dan Hitchcock of the SC Sea Grant Extension Program first discussed the potential for coordinating their stormwater and watershed education efforts. These service providers agreed that an appropriate first step would be to convene a small group of decision makers from the local MS4 communities to assess their need for watershed-related educational services and to evaluate the utility of a regional approach to stormwater education.

The CWSEC had its first official meeting with representatives from local MS4 communities on June 22, 2004. The participants unanimously endorsed a coordinated approach to regional stormwater education but realized immediately that many other parties would have to be brought to the table to make any coordinated effort a success. Thus, the first order of business was to brainstorm an exhaustive list of stakeholders. The core education providers agreed to draft and circulate a Regional Stormwater Education Strategy, which—after detailed feedback from the MS4 representatives at the Consortium's second meeting on October 25th—was finalized and distributed in November of 2004. Feedback gathered from the local MS4 representatives through an on-line needs assessment survey was synthesized with information gathered during the second meeting of the Consortium to generate a Phased Education Work Plan. This Phased Education Work Plan prioritizes education topics and target audiences to guide the implementation of the Regional Education Strategy.



In December 2004, the core education providers of CWSEC drafted a resolution in support of a coordinated regional stormwater education initiative. Each of the participating local MS4s have agreed to deliver the resolution to their respective city and county councils in early 2005. The MS4 communities who have participated in the CWSEC deserve recognition for their collaborative, proactive approach to regional stormwater challenges. These communities are: the city of North Myrtle Beach, the city of Myrtle Beach, the city of Conway, Georgetown County, and Horry County.

For more information about the Coastal Waccamaw Education Consortium, including a complete list of Consortium goals, the Regional Stormwater Education Strategy, the Phased Education Work Plan, the draft resolution delivered to each of the local MS4 communities, contact information for the core education providers, and minutes from the first two meetings, please visit the Consortium webpage at www.north-inlet.sc.edu/training/stormwater_education/index.htm.

Fish Smart, Eat Smart, It's for Your Health

By Meredith Barkley, SCDHEC

Like to fish? Better yet, do you like to eat the fish you catch? If you do, you might want to do a little research on the fish in your favorite fishing spots. Some fish in South Carolina are not safe to eat because they are contaminated with harmful chemicals like mercury and PCBs. Contaminated fish do not look, smell, or taste different than other fish, so how do you know where you should be cautious?

Each year DHEC issues Fish Consumption Advisories which lists where you should limit the amount of fish that you eat. The information in the advisories helps you decide where to fish, which fish to keep, and how much fish to eat. This year DHEC, in partnership with the SC Department of Natural Resources, is beginning a new "Fish Smart! Eat Smart!" campaign to spread the word about DHEC's advisories and the dangers of contaminated fish.

The 2005 Advisories will be issued on April 1st. Look for a redesigned advisory booklet and other materials. Check out the Fish Advisory website at www.scdhec.gov/fish to see the latest advisories and information. You can also download the current advisory booklet from the website.

For more information on Fish Consumption Advisories, contact Meredith Barkley at barklemb@dhec.sc.gov or (803) 898-4211.

Did You Know?

Mercury in fish tissue was the second most common reason for waterbodies being listed as impaired on South Carolina's 2004 303(d) list.

Now Available

Stormwater Illicit Discharge Detection and Elimination Manual

The Center for Watershed Protection and the University of Alabama, under a grant from EPA, have produced a comprehensive manual for municipalities that must develop and implement programs to find and correct illicit discharges to their storm sewer systems. The new manual includes detailed information on creating and managing a program, and a comprehensive guide to field and lab protocols. The new manual and supporting materials can be downloaded free of charge at www.cwp.org/idde_verify.htm.

National Pollutant Discharge Elimination System Permits Online

EPA is implementing a multi-year project to scan copies of major NPDES permits and make them easily available to the public on their website. You can now find over 2000 NPDES individual and general permits at www.epa.gov/npdes/permitsearch.

Shoreline Conservation

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Many conservation plants such as Switch Grass provide deep root growth and wildlife habitat.

conservation appearance while benefiting water quality and the lake integrity. This demonstration provides landowners with an alternative for shoreline stabilization with conservation benefits. Site approvals and permits are issued through the Lake Murray Management Office of SCE&G.

The demonstration site is located at SCE&G boat ramp # 3, Murray Shores off Hwy 378 near the Lexington and Saluda county line. The site is now open to the public for observation. For more information and possible tours, contact Jim Wilson with NRCS, at (803) 576-2084 or Tommy Boozer with SCE&G at (803) 217-9007. A brochure about the demonstration site is available and can be viewed on line at www.sc.nrcs.usda.gov/technical/engineering.html.

ARMORTEC cells with and without turf.

Coming Events

* A Celebration of Water, City of Columbia's Water Festival, Riverfront Park, April 2, 2005. Contact Karen Kustafik, (803) 255-8163.
* NALMS 14th Annual Southeastern Lakes Management Conference, Lakes, Reservoirs, Watersheds—Challenges and Opportunities, Asheville, NC. April 13-15, 2005. Visit: www.nalms.org
* SC Native Plants Society Symposium 2005, The River in the City, Plant, Animal and Human Interactions in the Midlands of SC, Riverbanks Zoo & Botanical Garden, Columbia, SC. April 22-24. Visit: scnps.org/symposium.html.

Turning the Tide
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